LoGiCal®
produced by LGC

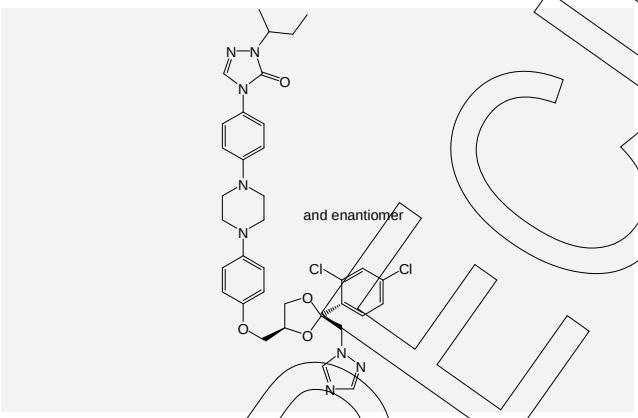
Certificate of Analysis

Reference Substance

Itraconazole

Catalogue Number:	LGCFOR0258.00
Lot Number:	20548
Molecular Formula:	$C_{35}H_{38}Cl_2N_8O_4$
Molecular Weight:	705.63
CAS Number:	[84625-61-6]

Long-term Storage:	2 to 8 °C, dark
Appearance:	white solid
Melting Point:	167 °C
Assay 'as is':	99.2 %



Date of shipment: **2020-November-30**

This certificate is valid for two years from the date of shipment provided the substance is stored under the recommended conditions.

Release Date: 2012-11-26

LGC GmbH

Dr. Sabine Schröder
Product Release

LGC Quality | ISO 9001:2008 DQS 102448 QM08

LGC Standards
Excellence through measurement

LGC GmbH, Im Biotechnologiepark, TGZ II, D-14943 Luckenwalde, Germany

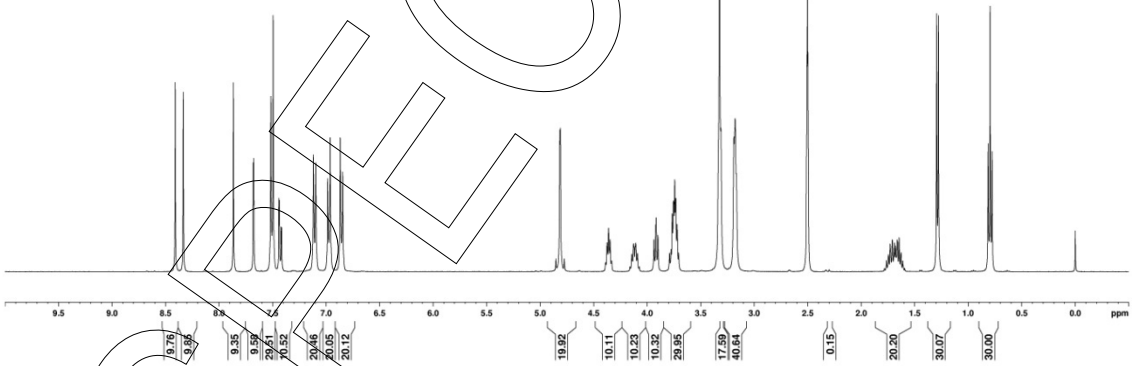
I. Identity

The identity of the reference substance was established by following analyses.

Ia. ^{1}H-NMR Spectrum

Conditions: 400 MHz, DMSO-d_6

The structure is confirmed with the signals of the spectrum and their interpretation.



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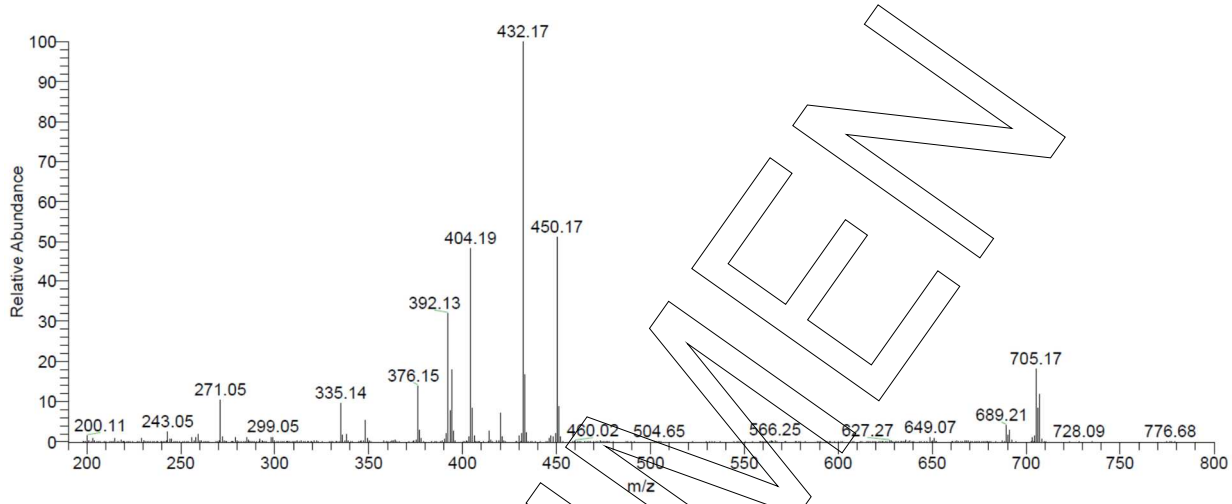
Ib. Mass Spectrum

Method: 4.5 kV ESI; vaporization temperature: 200 °C, direct inlet



m/z	fragments
705	[MH]
404	[$C_{19}H_{16}Cl_2N_3O_3$]
392	[$C_{22}H_{26}N_5O_2$]
376	[$C_{22}H_{26}N_5O$]

The signals of the mass spectrum and their interpretation are consistent with the structural formula.

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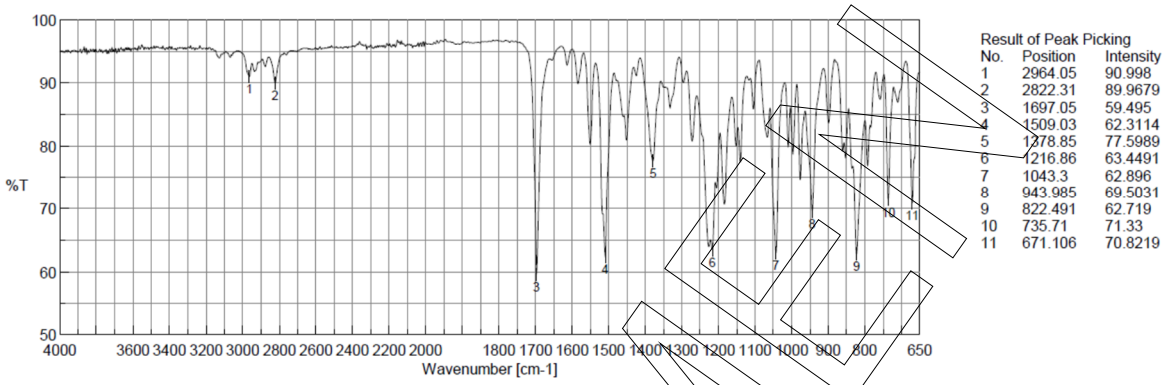
Ic. IR Spectrum

Method: Attenuated Total Reflection Fourier Transform Infrared (ATR-FTIR) Spectroscopy



Result of Peak Picking

No.	Position	Intensity
1	2964.05	90.998
2	2822.31	89.9679
3	1697.05	59.495
4	1509.03	62.3114
5	1378.85	77.5989
6	1216.86	63.4491
7	1043.3	62.896
8	943.985	69.5031
9	822.491	62.719
10	735.71	71.33
11	671.106	70.8219

The signals of the IR spectrum and their interpretation are consistent with the structural formula.

II. Purity

The purity of the reference substance was analysed by high performance liquid chromatography (HPLC).

HPLC Conditions:

Column:	**Conditions:**	**Detector:**	**Injector:**
Ascentis Express C 18 2.7 µm, 150 x 4.6 mm	1.0 ml/min, 40 °C mob. Phase A: 6.8 g/l Tetrabutylammonium sulfonate mob. Phase B: Acetonitrile	DAD 225 nm	Auto 10 µl; 0.2036 mg/ml in Methanol

0-2 min	A/B		65/35
2-22 min	A/B	to	50/50
22-27 min	A/B		50/50
27-32 min	A/B	to	65/35 (v/v)

LGC Standards
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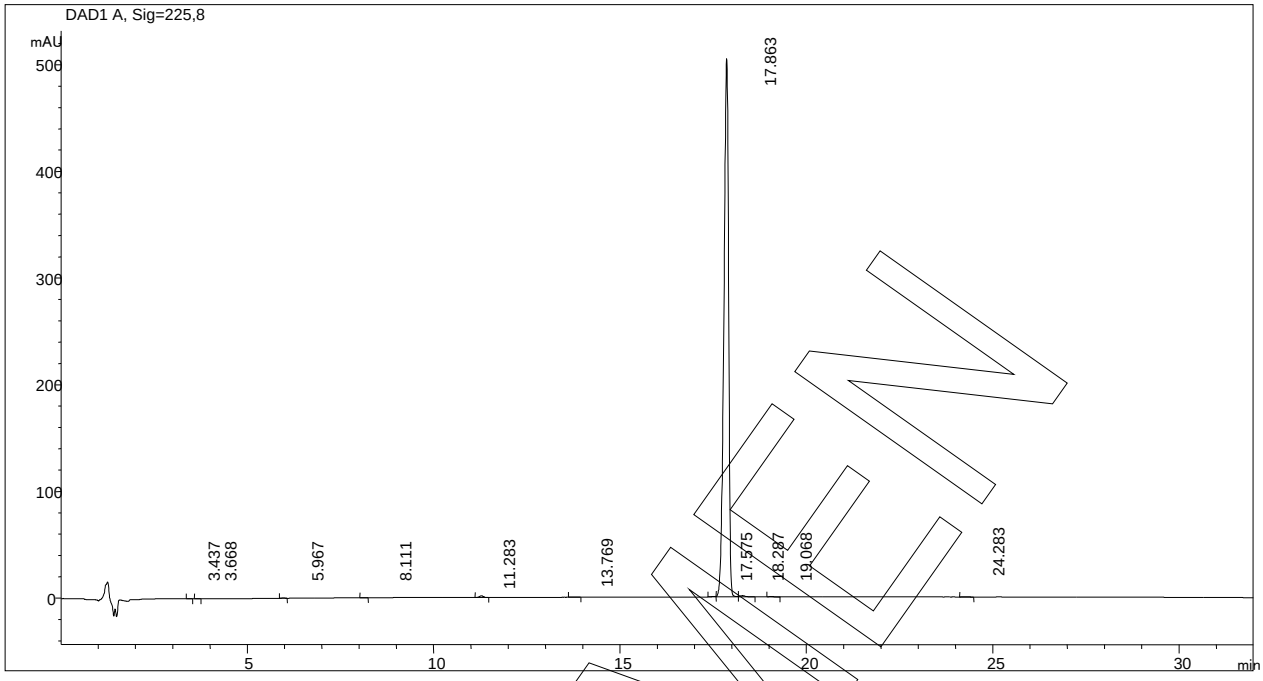

Area Percent Report - Sorted by Signal

Pk #	Retention Time	Area	Area %
1	3.44	0.76	0.02
2	3.67	0.41	0.01
3	5.97	0.43	0.01
4	8.11	0.41	0.01
5	11.28	10.53	0.23
6	13.77	0.93	0.02
7	17.57	2.48	0.06
8	17.86	4468.37	99.23
9	18.29	13.49	0.30
10	19.07	3.03	0.07
11	24.28	2.08	0.05
Totals		4502.92	100.00

For the calculation the system peaks were ignored. The content of the analyte was determined as ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100 %.

Results:

Average	99.23%
Number of results	n=6
Standard deviation	0.01%

LGC Standards
Excellence through measurement

III. Water Content

Method: Karl Fischer titration

No significant amounts of water were detected (< 0.05 %).

IV. Residual Solvents

Method: ^{1}H-NMR

Result: 0.07 % Toluene

V. Final Result

Total impurities (HPLC)	0.77 %
Water content	n. d. (not detected)
Residual solvents	0.07 %
Assay (100 % method) [1]	99.16 %

The assay is assessed to be 99.2 % ‘as is’

The assay 'as is' is equivalent to the assay based on the not anhydrous and not dried substance respectively.

[1] The calculation of the 100 % method follows the formula:

$$\text{Assay (\%)} = (100\ \% - \text{KF} - \text{RES}) * \frac{\text{Purity HPLC (\%)}}{100\ \%}$$

Water (KF) and Residual solvents (RES) are considered as absolute contributions, HPLC purity is considered as relative contribution.

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LGCFOR0258.00 Lot Number 20548